HOW FAR A LIGHT MAY BE SEEN UNDER WATER.

MR. EDOUARD SARASIN recently made an interesting report of the experiments of the committee of the physical society of Geneva, in regard to the transparency of the water of the lake. The auxiliary society of Geneva generously gave the committee twenty-five hundred francs to aid in the researches; and Messrs. Soret, Sarasin, C. de Candolle, H. Fol, A. Rilliet, Ch. Soret, Plantamour, and R. Pictet took part. Three candles in a lantern (the flame being fed by a continuous current of air) are visible, at a depth of thirty metres, in the pure water of the lake. An electric light was distinctly seen in the water at the foot of the hydraulic machine of Geneva at a depth of thirty-three metres. A few centimetres more caused the clear image to disappear, which was replaced by diffuse light, faintly perceptible at sixty-seven metres. Messrs. Sarasin and Soret noticed a very characteristic absorption ray in the spectrum of light which had traversed a certain layer of water. This ray had been seen before, but former publications had not attracted the attention of physicists. The recent observations confirmed the fact, and completed the data already obtained. This ray is in the red, near *B*. The same physicists have also undertaken experiments upon the transparency of water when agitated with insoluble substances, such as the chloride of silver, etc. They find that the distance of clear vision varies very little with the increase of the brilliancy of the luminous body and its absolute dimensions. Assisted by Dr. Marcet, the committee has made photographic experiments in the deep portions of the lake. Down to two hundred and fifty metres they find the effect of light on the sensitive plates; but this depth seems to be, at least for the plates now in use, the extreme limit of action of the sun's light. Below this point the lake is a vast, dark chamber.

THE MERIDIAN CONFERENCE.[1]

AT the meeting on Wednesday, the 22d, the work of the conference was finished so far as the transaction of new business is concerned. Gen. Strachey withdrew his resolution for ten-minute meridians for local time, and the conference then proceeded to pass a resolution reciting and affirming its action upon the seven resolutions already adopted. These, as finally determined upon, are as follows: —

1. "That it is the opinion of this congress that it is desirable to adopt a single prime meridian for all nations, in place of the multiplicity of initial meridians which now exist."

2. "That the conference proposes to the governments here represented the adoption of the meridian passing through the centre of the transit instrument at the observatory of Greenwich, as the initial meridian for longitude."

3. "That from this meridian, longitude shall be counted in two directions up to 180°, east longitude being plus, and west longitude minus."

4. "That the conference proposes the adoption of a universal day for all purposes for which it may be found convenient, and which shall not interfere with the use of local or other standard time, where desirable."

5. "That this universal day is to be a mean solar day; is to begin for all the world at the moment of mean midnight of the initial meridian, coinciding with the beginning of the civil day and date of that meridian; and is to be counted from zero up to twenty-four hours."

6. "That the conference expresses the hope, that, as soon as may be practicable, the astronomical and nautical days will be arranged everywhere to begin at mean midnight."

7. "That the conference expresses the hope that the technical studies intended to regulate and extend the application of the decimal system to angular measure, and to that of time, shall be resumed, so as to permit the extension of this application to all cases where it presents real advantage."

A final resolution was then passed, reading as follows: —

"That a copy of the resolutions passed by this conference shall be communicated to the government of the United States, at whose instance, and within whose territory, the conference has been convened."

With a hearty vote of thanks to the government for the facilities offered, to the president, Admiral Rodgers, for his impartiality and courtesy, and to the secretaries for their faithful work, and with a suitable response by the president, the conference adjourned, subject to the call of the latter, for the purpose only of verifying the protocols of the proceedings.

The phraseology of the seventh resolution is somewhat peculiar; and the word 'resumed' looks very much like a mistake in translating 'résumer,' as the resolution was introduced by the French delegates.

[1] Concluded from p. 406.

THE RESOURCES OF THE UNITED STATES.

THE seventh quarto volume of the Tenth census, containing the tables of valuation, taxation, and public indebtedness, must be regarded as the most exact, and one of the most valuable, yet issued. It is largely historical in its treatment of the subject, which allows an exact historical statement more readily than most of the subjects of these volumes; and it thus presents a view of the finances of the United States for a century, which must be of great interest to all economists. There is also much information of a political and personal nature contained in the history of the foreign loans made by the United States and by individual states, including some description of the repudiated debts of Pennsylvania, Missis-